USSR

LEYTEN, A., Tr. vychisl. tsentra. Tartus. un-t, 1971, vyp 22, pp 47-54

1967, Abstract No 1V307, as well as RZh-Matematika, 1969, Abstract No 12V435K).
A theorem similar to theorem 3.1 in the exposition of DALTON and LLEWELYN's
algorithm (RZh-Matematika, 1969, Abstract No 12V435K, Chapter 6, Section 3) is
proved.

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UDC 51.621.391

USSR

LEYTEN, A.

"On Obtaining a Cutoff in a B-Algorithm"

Uch. zap. Tartus. un-ta (Educational Notes of Tartus University), No 305, 1972, pp 269-272 (abstracts in Estonian and German) (from RZh-Matematika, No 11, Nov 73, Abstract No 11 V673).

Translation: In previous works (RZh Mat, 1966, 2 V265; 5 V236) a b-algorithm was suggested to solve a task of lexicographic maximization with linear constraints and Boolean variables, with the aid of a cutoff (the author erroneously cites a different reference — RZh Mat, 1965, 11 V206). The problem consists of finding a lexicographic maximum of the vextor

$$(x_1, x_2, \ldots, x_{n_1}) \to \text{lex max,} \tag{2}$$

$$\sum_{j=1}^{n} a_{ij} x_j = b_i, \qquad i = 1, 2, \ldots, m, \tag{3}$$

$$x_j \geq 0, \quad j = 1, 2, \ldots, n, \tag{4}$$

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USSR

LEYTEN, A. Uch. zap. Tartus. un-ta, No 305, 1972, pp 269 - 272

$$x_j \leq 1, \quad j=1,2,\ldots,n_1 (n_1 \leq n),$$ (5)

$$x_j\text{—integral}, \quad j=1,2,\ldots,n_1.$$ (6)

According to theorem 4.1 of the book referenced as RZh Mat, 1969, 12 V435X, the inequality

$$\sum_{j=1}^{j=1-1} [(1-2x_j^r)x_j + x_j^r] + (1-x_1) \geq 1$$ (7)

is the correct cutoff. Here $X^r = (x_1^r,\ldots,z_n^t)$ is the optimal plan of problem (2) - (5) (supplemented by cutoffs) on the rth iteration, x_1^r is non-integral, $1 = \min\{p | x_p^r \text{ --nonintegral}; \ p=1,2,\ldots,n_1\}$. Within a certain class of cutoff of the type B algorithm, the author determines the most effective. It is stronger than (7) and has the following form:

$$\sum_{j=1-1} (-x_j^r x_j + x_j^r) + (1-x_1) \geq 1.$$

Yu. Finkel'shteyn

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USSR

LEYTEN, A.

"Near-Discrete Problems of Linear Programming"

Tr. Vychisl. tsentra. Tartus. un-t (Works of the Computing Center. Tartu University), 1971, vyp. 22, pp 47-54 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V411)

Translation: The author considers the problem of linear programming with variables $x_1, \ldots, x_n$ and the additional limitation

$$x_j \in A^j = \bigcup_{i_j=0}^{n_j} A^j_{i_j}, \quad j = 1, \ldots, n_1 \, (n_1 < n).$$

Here $A^j_{i_j}$ is a segment on the number axis. Various special cases are considered. The initial problem is reduced to a partially integral problem in linear programming. A geometric interpretation is given in the case $n = 2$. It is noted that the number of variables may increase appreciably with a change from the initial problem to the partially integral problem. Therefore the author feels that the most promising approach to solution of near-discrete problems is the Dalton-Llewelyn approach (see RZh-Mat, 1967,

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LEYTEN, A., _Tr. Vychisl. tsentra. Tartus. un-t_, 1971, vyp. 22, pp 82-88

1V307, and also RZh-Mat, 1969, 12V435K). Proof is given for a cut-off theorem analogous to theorem 3.1 in exposition of the Dalton-Llewelyn algorithm (RZh-Mat, 1969, 12V435K, ch. 6, § 3). Yu. Finkel'shteyn.

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USSR

LEYTEN, A. K.   UDC: 51

"Some Modifications of the Traveling Salesman Problem"

Tr. Vychisl. tsentra. Tartus. un-t (Transactions of the Computer Center, Tartu University) No 28, 1973, pp 44-58 (from RZh-- Matematika, No 1, 1974, Abstract No 1V514)

Translation: For the problem of the traveling salesman with a sym-metrical distance matrix; a set of cities 0,1,...,n; and the ini-tial city 0 three modifications are proposed.

In the first, known as the ε problem (ε is a specified fixed number) the requirement that the salesman visit all the cities is replaced by the following less stringent requirement: in the ε neighborhood of each city, there should be at least one city the salesman can visit. It is shown that the optimal solution of this problem may depend on the choice of the initial city by the salesman for his route. In the choice of the best initial city, it is sufficient to limit oneself to a choice of all cities from the ε neighborhood of any one of them, that being fixed. It is

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LEYTEN, A. K., Tr. Vychisl. tsentra. Tartus. un-t, No 28, 1973, pp 44-58

then desirable to fix that city in whose $\mathcal{E}$ neighborhood are the fewest cities. The author discusses the question of the nature of the dependence of the optimal solution of the $\mathcal{E}$-problem of the traveling salesman on the value of $\mathcal{E}$. It is proved that the $\mathcal{E}$-problem can be formulated as a problem of integral nonlinear programming of a special type. The assumption is made that for solving the $\mathcal{E}$-problem, special methods for solving the ordinary problem of the traveling salesman, the method of branches and boundaries, for example, can be modified.

In the second modification, known as the d-problem of the traveling salesman, it is assumed that the salesman can stop daily at no more than p cities, traveling a distance each day that does not exceed the number D. We are required to find the route to be covered in a minimum number of days. Solution of the d-problem also depends on the choice of the starting point for the route, although the deviation may be only one day. To solve the d-problem, an algorithm is proposed which is based on a partial choice of permissible solutions to the problem.

In conclusion, the author formulates the t-problem of the traveling salesman, for which he proves the existence of an equivalent formulation in the form of a problem of integral nonlinear programming of a special type. In

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LEYTEN, A. K., Tr. Vychisl. tsentra. Tartus. un-t, No 28, 1973, pp 44-58

the t-problem, besides the matrix of the traveling times, which plays a part in the distance matrix, the matrix $T_j = (t_{ikj})$ for the time the salesman waits for transportation in city j for the trip along the i-j-k route is also specified (it is considered that the salesman does not have his own means of transportation). We are required to find the route for which the total time spent on the road and in waiting for transportation is a minimum. Ye. Gabovich.

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USSR

LANIN, M. R., et al., Tr. Vychisl. tsentra. Tartus. un-t, 1972, vyp. 26, pp 35-42

Here the condition for division into classes has the form:

$$\sum_{j=1}^{s} x_{ij} = 1, \quad i = 1, 2, \ldots, N. \tag{2}$$

The objective function has the following form:

$$-Z_1(X) + rZ_2(X) \to \max, \tag{3}$$

where r is a nonnegative parameter,

$$Z_1(X) = \sum_{j=1}^{s} \max_{x_{ij} = x_{kj} = 1} d_{ik}, \quad Z_2(X) = \sum_{j=1}^{s} \sum_{i=1}^{N} \min_{\substack{x_{kj} = 1 \\ x_{ij} = 0}} d_{ik}.$$

the term $(-Z_1(X))$ in the objective function allows for the requirement that points of the same class be as close to each other as possible, and the term $Z_2(X)$ allows for the requirement that the classes themselves be as far from each other as possible.

Since problem (1)-(3) can be solved as an integral, linear programming problem with an auxiliary condition, the authors suggest applying to it the algorithm proposed in the monograph by A. A. KORBUT and this abstracter (RZh-Matematika, 1969, Abstract No I2V435K, chapter 8). A numerical example is considered. Bibliography with 10 titles.

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USSR   UDC 51

LANIN, M. R., and LEYTEN, A. K.

"Use of Discrete Programming in the Taxonomy Problem"

Tr. Vychisl. tsentra. Tartus. un-t (Works of Computer Center of Tartu University), 1972, vyp 26, pp 35-42 (from RZh-Matematika, No 3, Mar 73, Abstract No 3V550 by YU. FINKEL'SHTEYN)

Translation: The authors consider the classification problem, also called numerical taxonomy and cluster analysis (RZh-Matematika, 1970, Abstract No 8V380). In a coordinate space there is a set of objects; it is required to divide them into classes which are homogeneous in some sense (in other terminology: taxis, clusters). In an attribute space there is a set of objects (points) $P = \{P_1, P_2, \ldots, P_N\}$. Initial information is given in the form of a square symmetric (NxN) matrix $\| d_{ik} \|$, elements of which define the distance between points in the attribute space. It is required to divide the set of points P into a fixed number s of classes $K_1, K_2, \ldots, K_s$ ($s \leq N$), among which there may also be empty classes.

The authors introduce Boolean variables x_{ij} $\begin{cases} 0, & \text{if } P_i \notin K_j, \\ 1, & \text{if } P_i \in K_j, \end{cases}$ $\begin{array}{l} i = 1, 2, \ldots, N \\ j = 1, 2, \ldots, s \end{array}$ (1)

1/2

1/3   016   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--SPECIFIC FEATURES OF PAROTID SALIVARY GLAND COLLATERAL BLOOD FLOW
   AFTER EXPERIMENTAL VASCULAR OBSTRUCTION AND INDUCED ASEPTIC
AUTHOR-(02)-LEYTES, A.L., SHEYNMAN, V.YU.

COUNTRY OF INFO--USSR

SOURCE--ARKH ANAT GISTOL EMBRIOL 58(2): 44-50. ILLUS. 1970.

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SALIVARY GLAND, BLOOD CIRCULATION, MEDICAL EXPERIMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1055   STEP NO--UR/9076/70/058/002/0044/0050

CIRC ACCESSION NO--AP0128483
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0128483

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTS IN 50 RABBITS WERE
USED FOR MACRO- AND MICROSCOPIC STUDIES OF TRANSFORMATIONS IN
INTRAORGANIC BLOOD VESSELS OF THE PAROTID SALIVARY GLAND AFTER OCCLUSION
OF EXTRA ORGANIC VESSELS SUPPLYING EITHER THE INTACT; PRACTICALLY NORMAL
GLAND OR THE GLAND AFFECTED WITH ASEPTIC TURPENTINE INFLAMMATION.
SECTION OF I OF THE MAIN CERVICO CEREBRAL VESSELS (COMMON CAROTID ARTERY
OR EXTERNAL JUGULAR VEIN) IS USUALLY COMPLETELY COMPENSATED FOR THE
DEVELOPMENT OF COLLATERAL CIRCULATION. THE MORE STRIKING CHANGES IN THE
VASCULATURE OF THE GLAND WERE SEEN AT EARLY POSTOPERATIVE PERIODS. THE
OCCLUDED BLOOD SUPPLY PROMOTES FURTHER TRANSFORMATION OF THE GLAND'S
VASCULAR BED WITH TIME. NORMAL VASCULAR PATTERNS ARE NOT APPARENT
BEFORE 90 DAYS POSTOPERATION. IMPAIRED DRAINAGE OF BLOOD FROM THE GLAND
IS COMPENSATED FOR MUCH FASTER (AFTER 15-30 DAYS). COMPLETE RECOVERY OF
THE GLAND'S VASCULATURE DID NOT TAKE PLACE EVEN AS LATE AS 180 DAYS.
AFTER OBSTRUCTION OF THE COMMON CAROTID ARTERY AND PARTICULARLY, THE
EXTERNAL JUGULAR VEIN, DURING THE COURSE OF ASEPTIC INFLAMMATION,
CHANGES IN THE VASCULAR BED OF UNAFFECTED PORTIONS OF THE GLAND PROCEED
WITH GREATER INTENSITY. IN THESE EXPERIMENTS, GREAT NUMBERS OF ENLARGED
AND TORTUOUS COLLATERAL VESSELS MAY BE SEEN IN THE INTERLOBULAR
CONNECTIVE TISSUE UP TO THE 90TH DAY. THE DENSITY OF TERMINAL CAPILLARY
NETS WAS 1.5-2.5 THAT OF CAPILLARIES IN EXPERIMENTS WHERE A MAIN CERVICO
CEREBRAL VESSEL WAS SECTIONED WITHOUT PRELIMINARY INFLAMMATION.
CLINICAL IMPLICATIONS OF THESE FEATURES IN THE DEVELOPMENT OF COLLATERAL
CIRCULATION ARE DISCUSSED.

UNCLASSIFIED

CIRC ACCESSION NO--AP0128483
ABSTRACT/EXTRACT--FACILITY: DEP. NORM. ANAT., KIRG. STATE MED. INST.,
FRUNZE, USSR.

UNCLASSIFIED

USSR

UDC 669.18-147;621.746.393

KISSIL', N. YE., MANOKHIN, A. I., and LEYTES, A. V., Elektrostal', Plant and Central Scientific Research Institute of Ferrous Metallurgy

"Solidification of Round Continuous-Cast Ingots Made of Heat-Resistant Nickel Alloys"

Abstract: Heat-resistant nicekl-base alloys differ substantially from ordinary carbon steels by their thermophysical properties (liquidus and solidus temperatures, latent heat of crystallization, etc.) which manifest certain features in their solidication. In round continuous-cast ingots with diameters of 100-170 mm it was theoretically and experimentally established that crust thickness in the inital stage of solidification (up to a thickness 30-40% of the radius) does not grow by the conventional square root law with time but by another law close to the linear law. The method of the experiments on a continuous casting unit and calculations are described. Four figures.

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USSR   UDC: 669.187.25:621.365.2

LEYTES, A. V., MIRONOVA, N. A., KISIL', N. Ye.

"Influence of Contamination of Consumable Electrodes of Heat-Resistant
Alloys with Nonmetallic Inclusions on Refining of Metal During Vacuum-
Arc Remelting"

Moscow, Stal', No 2, 1973, pp 128-130

Abstract: Two typical industrial heat-resistant alloys (I: 6% Al and II:
4.5% Al and 2.5% Ti) are used in a study of the influence of the form and
quantity of inclusions in the initial metal on the degree of their removal
in VAR. The metal of the electrode remelted was cast by two methods -- in an
atmosphere of argon and in an active atmosphere; in the second case, considerably
more inclusions were formed, due to the appearance of groups (nitrides
accompanied with oxide films) and larger accumulations (I, accumulations of
Al nitrides; II, Al and Ti nitrides). VAL removes primarily accumulations of
inclusions, while the content of fine individual inclusions is almost not
changed. The inclusions which float upward form a slag layer on the liquid
surface of the metal, contaminating the surface zone of the ingot; Al nitrides
dissociate, causing ionization in the arc zone and disrupting the current
flow mode. Ti nitrides do not dissociate.

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LEYTES, A.V.

So: JPRS 59637
27 July 1973

UDC 669.14:620.192.63/.49

MECHANISM OF REMOVING NITRIDE INCLUSIONS FROM HEAT-RESISTANT ALLOYS DURING MELTING

[Text] Processes of metal refining during vacuum-arc melting lead to lowering of the content of nonmetallic inclusions and gases in the ingot. Existing concepts on the mechanism of removing inclusions from metal during vacuum-arc remelting (VAR) are basically reduced to processes of floating and dissociation /1-5/.

However, as thermodynamic analysis shows, the high temperature of the metal in the region of arc burning eliminates the possible existence of most of the inclusions (including nitrides) in the molten bath /6-12/. At the same time, observation into the process of VAR show that an accumulation of slag occurs on the bath surface (rendering a large effect on stability of the electrical mode of remelting and ingot quality. Evidently, refining of metal during VAR is a complex process, and its effectiveness under ideal conditions depends on many factors.

Purpose of this work was to study the mechanism of removing nitrides from heat-resistant alloys during VAR using continuously-cast consumable electrodes with a diameter of 125 mm having a substantial difference in the composition, quantity, dimensions and distribution of nonmetallic inclusions.

Heat-resistant nickel alloys KhN56VMKYu (Alloy I) and KhN51VMTYuKFR (Alloy II) were selected for this research. These alloys were alloyed with a significant amount of highly active oxide- and nitride-forming elements. Alloy I contained up to 6% Al and alloy II--up to 4.5% Al and up to 2.5% Ti.

Difference in the contamination of the consumable electrodes was produced by means of pouring the metal into an argon

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LABORATORY STUDIES OF STRESSOR AND SENSITIZING ACTION OF HUMAN GAMMA-GLOBULIN

Leytes, E. I.; Spotarenko, S. S.; Avaliani, Z. S.;
Semashko, M. I.; Karon, B. I.

The authors applied determination of biochemical urinary excretion of 17-ketosteroids to the study of stressor effect of homologous gamma-globulin in man. The possible sensitizing action of this preparation was investigated by testing degranulation of mast cells of mouse subcutaneous connective tissue in their contact with the serum mixture of immunized children and gamma-globulin. It was found that gamma-globulin (10%) possessed a weak stressor effect, not manifested clinically. Gamma-globulin produced a desensitizing effect, which was evidently associated with the competition of gamma-globulin with allergic antibodies at the territory of connective tissue cells.

REEL/FRAME
19721904

CHANGED ACTIVITY OF SOME HYDROLYTIC ENZYMES IN THE TISSUE
CULTURE OF BONE MARROW MACROPHAGES DURING INTRACELLULAR
PARASITIZING OF SALMONELLA TYPHOSA

F. L. Leyes, Yu. Ya. Tendetnik, O. Ye. Ryadnova, I. P. Kudinkina
Central Research Institute of Epidemiology, Moscow

In protracted tests the fermentative reaction of reticulo-endothelial cells inoculated
with typhoid bacilli was studied in a bone marrow tissue culture. Penetration of the
causative agent into the cytoplasma of macrophages and other cells in the initial period
of intracellular parasitism of the bacteria (1—2 days) was accompanied by the raised
activity of lysosome enzymes — acid phosphatase and catepsine C, with subsequent
fall of their activity and destruction of the lysosomes. The activity of cytoplasmatic
enzymes — alisterase, aminopeptidase, alkaline phosphatase — was down already in the
early phase of phagocytosis. In infected cells obtained in immune animals the activity
of lysosome enzymes continued longer than in the cells taken in normal animals.

REEL/FRAME
19820401

TITLE--THE EFFECT OF MUSCULAR EXERCISES ON THE LIPOLYTIC ACTIVITY OF THE
   BLOOD SERUM AND OF THE CARDIAC MUSCLE OF RATS UNDER NORMAL CONDITIONS
AUTHOR-(03)-LITOVCHENKO, YU.S., LEYTES, F.L., LEMPERT, B.L.

CCUNTRY OF INFO--USSR

SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,
   VOL 14, NR 3, PP 37-42
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EXERCISE, BLOOD SERUM, LIPID METABOLISM, MYOCARDIUM, DIABETES
   MELLITUS

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1935   STEP NO--UR/0396/70/014/003/0037/0042

CIRC ACCESSICN NO--AP0127336
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0127336

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. IN RATS FORCED TO RUN IN A
TRAITBAN (MODERATE AND MAXIMAL MUSCULAR EXERCISES) BEFORE MEALS A RISE
OF LIPOLYTIC ACTIVITY OF THE BLOOD SERUM WHICH OCCURRED POINTED TO
INCREASED WAYS OF ENERGY UTILIZATION OF TRIGLYCERINE COMPONENT OF THE
BLOOD SERUM BETA-LIPOPROTEIDS. BUT ON FULL STOMACH THIS REACTION WAS
NOTED ONLY AT THE MAXIMAL MUSCULAR LOAD. IN RATS WITH ALLOXAN DIABETES
MUSCULAR EXERCISES PRODUCED THE SAME EFFECT UPON THE LYPOLYTIC ACTIVITY
OF THE BLOOD SERUM AS IN INTACT ANIMALS, AND ONLY DECREASED WITH MAXIMAL
MUSCULAR EXERCISES IN THE ANIMALS MADE TO RUN ON FASTING STOMACH. THE
ACTIVITY OF LIPOLYTIC ENZYMES IN THE MYOCARDIUM OF RATS ELEVATES IN
MODERATE PHYSICAL EXERCISES AND IN ALLOXAN DIABETES, BUT FELL BELOW THE
NORMAL LEVEL IN THEIR COMBINATION.   FACILITY: LABORATORIYA
PATOKHIMII ZHIRO-LIPOIDNOGO OBMENA PRI KAFEDRE PATOFIZIOLOGII
TSENTRAL'NOGO INSTITUTA USOVERSHENSTVOVANIYA VRACHEY, MOSKVA.

UNCLASSIFIED

TITLE--PURIFICATION OF NATURAL GAS USING THE VORTEX EFFECT -U-

AUTHOR-(05)-LEYTES, I.L., SEMENOV, V.P., POLOVINKIN, V.A., LURYE, B.I.,
   TAGINTSEV, B.G.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(5), 345-50

DATE PUBLISHED--------70

SUBJECT AREAS--PROPULSION AND FUELS

TOPIC TAGS--NATURAL GAS, CHEMICAL SEPARATION, VORTEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1734   STEP NO--UR/0064/70/046/005/0345/0350

CIRC ACCESSION NO--AP0138707
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0138707
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   EFFECTS OF LENGTH-HEIGHT RATIOS IN
A JET VORTEX INTAKE OF 200 MM PRIME2 CROSS SECTION AND INPUT-OUTPUT
PRESSURE RATIOS BETA EQUALS P SUB2-P SUB4 ON THE COOLING EFFECT AND THE
DEGREE OF REMOVAL OF C SUB6 POSITIVE HYDROCARBONS FROM NATURAL GAS WERE
STUDIED.   COOLING OF THE STARTING GAS BY THE COLD STREAM ISSUING FROM
THE VORTEX WAS MAX. AT MU VALUES (0.7-0.9) WHICH DECREASED AS BETA
INCREASED.   AT MU EQUALS 0.75 AND BETA EQUALS E.R, THE HIGHEST DELTA T
SUB1-4 (74DEGREES) WAS OBSD.   COOLING BY BOTH THE COLD STREAM AND VORTEX
WERE LOWER, THE HIGHER THE CONTENT OF IMPURITIES TO BE CONDENSED.   C
SUB6-8 HYDROCARBON CONTENT IN GAS ISSUING AT 4-9 ATM AND INITIALLY
CONTG. 15 G-M PRIME3 C SUB6-8 HYDROCARBONS DROPPED FROM TO 12.7, 8.7,
4.1, 3.9, 2.9, AND 0.8 AS THE TEMP. OF THE COLD STREAM 0DEGREES TO MINUS
9DEGREES, MINUS 10DEGREES TO MINUS 19DEGREES, MINUS 20DEGREES TO MINUS
29DEGREES, MINUS 30DEGREES TO MINUS 39DEGREES, MINUS 40DEGREES TO MINUS
49DEGREES, AND MINUS 50DEGREES TO MINUS 60DEGREES.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--23OCT70
1/2   026
TITLE--THE ROLE OF "FAT MOBILIZING FACTOR OF THE HYPOPHYSIS" IN
   PATHOGENESIS OF DISTURBANCES OF LIPID METABOLISM IN DIABETES MELLITUS
AUTHOR-(03)-LEYTES, S.M., VIRSALADZE, D.K., DAVTYAN, N.K.

COUNTRY OF INFO--USSR

SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,
   VOL 14, NR 2, PP 74-79
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DONOR BLOOD, BLOOD SERUM, DIABETES MELLITUS, LIPID METABOLISM,
   ADIPOSE TISSUE, INSULIN, INHIBITION, PITUITARY GLAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0023   STEP NO--UR/0396/70/014/002/0074/0079

CIRC ACCESSION NO--AP0105122
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0105122

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN COMPARISON WITH THE EFFECT OF
LYOPHILIZED DIALYZATES OF THE SERUM (LDS) OBTAINED FROM DONORS, LDS OF
PATIENTS SUFFERING FROM DIABETES MELLITUS PRODUCED A MORE PRONOUNCED
EFFECT IN RESPECT TO INCREASE OF THE CONTENT OF NONESTERIFIED FATTY
ACIDS (NEFA), OF BETA LIPOPROTEIDS AND PHOSPHOLIPIDS AND ALSO FO
GLYCEMIA IN THE SERUM OF RABBITS TO WIHCH LDS WAS INJECTED
INTRAVENOUSLY. THE ACTION OF LDS WAS MORE PRONOUNCED IN RESPECT TO THE
EFFECT ON BETA LIPOPROTEIDS IN DIABETICS WITH A RELATIVELY GREATER LEVEL
OF GLYCEMIA AND SERUM NEFA. IN VITRO EXPERIMENTS WITH ADIPOSE TISSUE
DEMONSTRATED MORE PRONOUNCED FAT MOBILIZING PROPERTIES OF LDS OF THE
PATIENTS SUFFERING FROM DIABETES MELLITUS IN COMPARISON WITH LDS OF
DONORS. THIS PROPERTY OF LDS IN DIABETES PATIENTS IS PARTIALLY
ASSOCIATED WITH INHIBITION OF INSULIN ACTION AND   ADRENALIN
ACTIVATION. IT MAY BE ADMITTED THAT THE MENTIONED ACTION OF LDS IS
CONDITIONED BY LIPOMOBILIZING PEPTIDES OF THE HYPOPHYSIS.
FACILITY: KAFEDRA PATOLOGICHESKOY FIZIOLOGII TSENTRAL'NOGO INSTITUTA
USOVERSHENSTVOVANIYA VRACHEY, MOSCOW.

87868x Effect of the serum of patients with diabetes mellitus
on the action of insulin on adipose tissue. Lelchuk, S. M.;
Davtyan, N. K.; Lipunova, Z. I. (Tsent. Inst. Usoversh.
Vrachei, Moscow, USSR). Probl. Endokrinol. 1970, 16(1), 31-5
(Russ). Serum (1:2 diln.) from diabetes mellitus patients added
in vitro reduced the inhibitory action of insulin (15 milliunits/ml)
on lipolysis, output of nonesterified fatty acids, and glucose
absorption by human and rat adipose tissue to a greater extent
than did added donor serum. Inhibition of insulin activity by
diabetic serum may be 1 of the factors causing activation of
lipolysis, inhibition of liposynthesis, and glucose absorption by
this serum in vivo.   BJJR

REEL/FRAME

19761285

USSR   UDC: 8.74

KRASILOV, A. A., KSENOFONTOV, Yu. I., LEYPES, V. L.

"Realization of an ALGOL-60 Type Language on the M-220 Computer"

Translation: The paper is a report on a high-speed translating system
(up to 1 200 commands/min) for the M-220 computer to convert ALGOL programs
to machine codes. In addition to constructions in ALGOL-60, the input
language includes operations on data blocks, with complex numbers and logic
sequences of bits the length of a machine word. The characteristics of
the translator give the system excellent operational and service proper-
ties. Authors' abstract.

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USSR

UDC 669.71.053.4.094

LEYTEYZEN, M. G., BITNER, A. A.

"Obtaining Well-Precipitating Sludge after Leaching High-Silicon, Low-Iron Bauxite"

Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 120-125 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G144)

Translation: The precipitability of slurries after leaching high-silicon, low-iron bauxites in the successive Bayer-sintering system is investigated. Laboratory and experimental-plant tests have established the dependence of the precipitability of the slurry on the conditions of formation of the first batches of hydroalumosilicate. A procedure is proposed for accelerating the process of precipitating red slurries by seed crystallization of sodium hydroalumosilicate. There are 2 illustrations.

1/1

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USSR

UDC: 681.325.6

LEYTMAN, B. S., YAUNZEM, A. V., Riga Polytechnical Institute

"A Device for Performing Logical Operations on Analog Quantities"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296261, division H, filed 7 Apr 69, published 12 Feb 71, p 191

Translation: This Author's Certificate introduces a device for performing logical operations on analog quantities. The device contains AND and OR diode logic circuits, transistorized switches, and a matching transformer. As a distinguishing feature of the patent, the functional possibilities of the device are extended by connecting the AND and OR diode logic circuits in parallel to the output of the device, while their outputs are connected through controlled transistor switches of opposite conductivity type to the primary windings of the matching transformer.

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1/2   030   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--ACCOUNT FOR SLIP AND CONVECTION IN GAS BETWEEN TWO PARALLED PLATES
    -U-
AUTHOR--LEYTSINA, E.G.

COUNTRY OF INFO--USSR

SOURCE--INZHENERNO-FIZICHESKIY ZHURNAL, 1970, VOL 18, NR 1, PP 150-153

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS FLOW, FLAT PLATE, CONVECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0577   STEP NO--UR/0170/70/018/001/0150/0153

CIRC ACCESSION NO--AP0121246
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0121246
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLID CURRENT LINES FOR (A)
CORRESPOND TO (17), FOR (6), TO 17 PRIME; DASHED LINES FOR (A) AND (6) E
EQUALS 0; DASHED DOTTED LINES FOR (A) K EQUALS 0, FOR (6) K SUB1 EQUALS
0. SUMMARY. A RAREFIED GAS FLOW BETWEEN TWO PARALLEL PLATES WITH
SINUSOIDAL TEMPERATURE DISTRIBUTION ON ONE OF THEM IS CONSIDERED WITH
ACCOUNT FOR SLIP AND FREE CONVECTION. FIG. 1 FURNISH CURRENT LINES
CORRESPONDING TO CURRENT FUNCTIONS (17) AND (17 PRIME). IT IS SHOWN
THAT WITH CHANGING PRESSURE AT GIVEN L OR L AT CONSTANT PORESSURE,
VARIOUS VALUES ARE OBTAINED FOR THE RATIO OF THE COEFFICIENT DETERMINING
SLIP AND FREE CONVECTION.

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AA0047096‾   *LEY TUSH   M.L.*

UR 0482

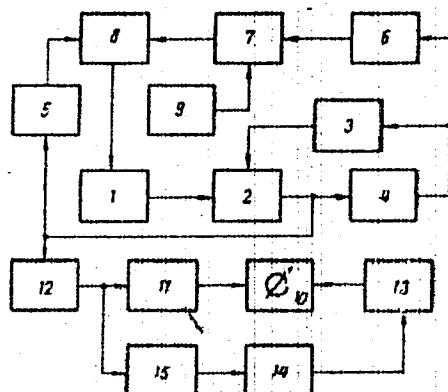Soviet Inventions Illustrated, Section II Electrical, Derwent,

244504 AUTOMATIC INDUCTANCE METER FOR TESTING PIEZO-
ELECTRIC RESONATORS contains master harmonic
generator (1), wide band amplifier (2) whose amplif-
ication factor is automatically changed by regulator
(3), four-terminal resistance network (4) to which
is connected piezoelectric resonator to be tested
(not shown), automatic frequency trim circuit con-
sisting of wide band amplifiers (5) and (6), sampling
phase inverter (7) and phase detector (8). Pulse
oscillator (9) changes the phase of sampling phase
inverter (7). One input of ratiometer (10) is
connected to input of resistance network (4) through
amplitude detector (11) and amplifier of harmonic
signal (12). The second input of ratiometer (10)
is connected to input of amplifier (12) through
converter circuit of connected in series peak
detector (13), impulse amplifier (14) and frequency
detector (15). The scale of ratiometer (10) is
suitably graduated for direct reading the dynamic
inductance of piezoelectric resonator.
12.6.68 as 1246963/26-9.V.F.IVANCHIN.et al(7.10.69)
Bul 18/28.5.69. Class 21e. Int.Cl.G Olr.

1/2   4

197905B3

AA0047096

AUTHORS: Ivanchin, V. F.; Shkinderov, Ye. G.; Leytush, M. L.; Shemarina, L. I.;
Dvoryantsev, N. V.

19790584

USSR

GORDEYEV, A. N., LEYVA, A., FERRARI, O. M.

"On Measuring the Correlation Function of Optical Paths in a Turbulent Atmosphere by Using a Twin-Wave Interferometer"

Translation: The authors analyze the statistical nature of propagation of laser beams in a turbulent atmosphere. Theoretical substantiation is given for the method of measuring the phase correlation function by using a modified Jamin twin-beam interferometer with beam splitting by a plane-parallel plate. Expressions are derived for determining the correlation coefficient from the measured contrast of the resultant interference pattern. The advantages of the given method over others are demonstrated. One illustration, bibliography of eight titles. N. 3.

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USSR   UDC 621.318.5

Dr. of Physico-Mathematical Science RABKIN, L.I., Engineers LEYTMAN, L.I.,
SHUL'MAN, S.M., VASIL'YEV, A.S.

"Relay Based On Magneto-Controlled Contacts With Use Of Ferroelast"

Moscow, Pribory i sistemy upravleniya, No 11, Nov 1971, pp 32-33

Abstract: It is concluded that Type FNTs ferroelast is a promising magneto-
dielectric material which will find wide use in switching technology, partic-
ularly in relays based on magneto-controlled contacts. The parameters of
Type FNTs-17 ferroelast are presented. Use of ferroelast makes it possible
to increase the sensitivity of the relay, to decrease its dimensions and con-
sumable power. Subsequent work must be conducted in the direction of increas-
ing the thermal stability, the insulation strength, and improvement of the
magnetic and elastic properties of the ferroelast which in addition will make
it possible to expand the range of its application. 6 ref. 1 fig. 2 tab.

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TITLE--GAS PHASE IN THE FLUIDIZED BED CHLORIDIZING ROASTING OF PYRITE
CINDERS -U-

AUTHOR--ZAK, M.S., LEYZEROVICH, G.YA., MAISKIY, O.V.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(1), 13-16

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FLUIDIZED BED, PYRITE, GAS STATE, WATER VAPOR, CALCIUM
CHLORIDE, MELTING POINT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1981/1738   STEP NO--UR/0136/70/043/001/0013/0016

CIRC ACCESSION NO--AP0051526
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0051526

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PYRITE CINDERS MIXED WITH CACL
SUB2 WERE ROASTED IN A FLUIDIZED BED, USING NATURAL GAS AS FUEL. AT
1000-1100DEGREES, CACL SUB2 VOLATILIZED AND DECOMPD. TO CAO AND OTHER
HIGH MELTING COMPDS. THE OPTIMUM O CONCN. FOR THE VOLATILIZATION OF
SIMILAR TO 70PERCENT OF THE CU AND ZN WAS 9-10PERCENT AT 1000DEGREES AND
4-6PERCENT AT 1050DEGREES, AND BEST PARTICLE SIZE WAS SMALLER THAN 0.074
MM. INCREASING THE O CONCN. MARKEDLY DECREASED THE CU VOLATILIZATION
RATE, AND TO A LESSER DEGREE THAT OF ZN. AT LARGER THAN 10PERCENT, H
SUB2 O VAPOR HAD A DELETERIOUS EFFECT ON CU AND ZN VOLATILIZATION, TO A
SMALLER DEGREE ON AG, AND LITTLE ON AU. THE VOLATILIZATION DECREASED
WITH INCREASING CINDER PARTICLE SIZE.

UNCLASSIFIED

USSR

GONCHUKOV, V. V., LEYZER, V. P., SMIRNOV, R. V., TYURIN, A. Ya.

"Development and Study of Small Memory Cubes Based on Thermally Stable
Ferrite Cores"

Moscow, Magnitnyye Elementy Pamyati, 1972, pp 67-71.

Abstract: This article studies problems related to the development and investi-
gation of small memory cubes of magnetic cores. As an example, a 1024 16-bit word
memory unit designed for matrix-type storage systems is studied. The analysis
of designs of small memory sections shows that arrangement of a memory section
on a flat plane has definite advantages over other arrangements. A photograph
of the memory unit studied is presented.

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Abstract: Experimental results are presented for the conversion
of energy from one passive light conductor to another at a small
distance from the first. The minimum length of contact required
for maximum transfer of the radiation is determined. The effect
of the transfer is used for mutual decrease in the radiation
of two-filament lasers (quenching). The case in which a one-
filament laser quenches two adjacent ones is investigated.

The possibility of an effect of a one-filament laser on several
is also investigated. Experiments performed with three-fila-
ment lasers demonstrated that the radiation jumps from one fila-
ment to the other two and decreases their radiation intensity.

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USSR

GAPRINDASHVILI, KH. I., et al, Radiotekhnika i Elektronika,
Vol 15, No 7, 1970, pp 1457-1460

The experimental results are presented in a table including a
case in which laser I extinguished lasers II and III. The
maximum extinguishing coefficients obtained for two- and three-
filament lasers turn out to be identical and equal to 0.50-0.65.
The extinguishing coefficient depends on the radiation energy
of the extinguishing laser and increases with an increase in
it, for the cases of both two and three filaments.

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Microelectronics

USSR   UDC 621.38:61

NAVERIANI, S.V., LEZHAVA, G.G., CHIKHLADZE, N.I.

"Microelectronic Circuit Of Multivibrator For Impedance Pneumograph"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic Technics. Scientific-Technical Collection. Microelectronics), 1971, Issue 5(31), pp 145-146 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No 5A257)

Translation: In known circuits conversion of a change of chest impedance (during breathing) into an electrical signal amounts to the fact that the [vector] impedance of the chest tissue is connected into a discontinuity [razryv] of the feedback circuit of the oscillator. In the process small changes of the impedance change the feedback very slightly, and as a consequence small changes are produced of the output voltage at the oscillator output (with deep breathing, a deviation of $\sim$ 5 percent). In order to increase the sensitivity, a multivibrator was developed, fulfilled by a circuit of a 2-stage amplifier with feedback using Type 2T332 silicon noncased semiconductors [PP] and deposited elements. The [vector] impedance of the chest cage, reduced to two active and one capacitance components of the chest impedance, enter the time-dirver network of the multivibrator. At the input the capacitance component is

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USSR

NAVERIANI, S.V., et al. Elektron.tekhnika.Nauch.-tekhn.sb.Mikroelektronika,1971, Issue 5(51), pp 145-146

decreased and the active component is increased. The circuit of the multivibrator assures direct conversion of the chest impedance into a FM-sequence of pulses. With the use of electrodes having an area of $8 \, cm^2$, deviation of the frequency in the presence of deep breathing reaches 30--50 percent of the center frequency of 50 kHz. The circuit is arranged directly on the electrode which considerably increased the noise immunity and reliability. 1 ill. 2 ref. N.M.

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USSR   UDC: 612-019

LEZHAVA, K.M., Georgian Zootechnical-Veterinary Pedagogical and Research Institute

"Pathomorphology of Experimental Braxy in Sheep and Guinea Pigs"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 2, 1970, pp 485-488

Abstract: Inoculation of sheep and guinea pigs with Clostridium septicum produced structural changes in various organs and tissues almost identical to those observed in natural braxy of sheep, except that the changes were somewhat more pronounced. The changes observed in the sheep and guinea pigs were also largely similar. If the animals died within 24 hours of infection, hematological disorders (hyperemia of various organs, stasis, hemorrhages) were the main pathological findings. If the animals died after 72-96 hours, in addition to the above there were degenerative changes (hyperemia, edema, hemorrhages, inflammation) in the heart, brain, liver, spleen, kidneys, stomach, and intestine.

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USSR

UDC 621.316.722.1(088.8)

GOL'BERG, V.A., LEZHAVA, V.V.

"Source Of Regulated Voltage"

USSR Author's Certificate No 253173, Filed 30 Aug 68, Published 24 Feb 70 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10B378P)

Translation: The circuit is patented for a regulator with pulse control in which, with the object of sustaining the level of the output voltage at not less than a fixed value, an added parametric regulator is used, connected in parallel and operating on the principle of linear control. The parametric regulator has an output voltage (less than the voltage of a regulator with pulse control) such that in a normal regime its transistor cuts off. During the transient process connected with throwing the load to the pulse regulator, the voltage drops at the output of the pulse regulator. At this time the parametric regulator is opened which maintains the output voltage of the power supply at a given level. S.D.

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USSR   UDC 621.315.592(088.8)

KISELEV, A. M., LEZHEBOKOV, I. I., NAROYCHIK, S. S., NIKOLAYEV, A. A., OSOVSKIY,
M. O., SELIVANOV, P. YA., SHKLYAREVSKIY, V. K.

"Procedure for Automatic Regulation of the Process of Noncrucible Zone Melting"

USSR Author's Certificate No 276016, Filed 24 May 68, Published 6 Oct 70
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G480)

Translation: A procedure is introduced for automatic regulation of the process
of noncrucible zone melting by keeping the ingot diameter constant by means
of a signal received as a result of measuring the effect of the projection of
the zone on a photoreceiver for controlling the ingot diameter. To improve
accuracy of regulation, a profile of the zone located directly on the crystal-
lization front is projected on the photoreceiver for controlling the diameter
of the ingot by means of a crystallization-front tracking system.

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Composite Materials

USSR   UDC 669.71'782'3

KOVAL', A. D., NATAPOV, YE. B., LEZHENKO, G. G., SEYN, V. I., SHEGAY, A. A.,
and SHMAKOV, A. M., Zaporozh'ye Machine Building Institute, Department of
Physical Metallurgy

"Molybdenum and Tungsten Fibers as a Strengthener of a Heat-Resistant Composite"

Abstract: This work was conducted to study certain mechanical properties of
wire, made at the Uzbek Refractory and Heat-Resistant Materials Combine (URHRMC),
and the American alloy TZM, and to explain the possibilities of realizing the
strength of molybdenum wire in a composite. Materials for this study were
molybdenum and tungsten wires grades MCh and MK, made at URHRMC, experimental
wire ChZM, and tungsten wire grade VA. A matrix of alloy EI435 was used with
filler wire 0.5 mm in diameter. Volume content of wire in the alloy was 24%.
Results of determining tensile strength showed that wire MCh had the lowest
mechanical properties at 800-1200°C.   Experimental alloy ChZM surpasses the
short-time strength of molybdenum alloys TZM, MCh, MK and ChZM (not heat
treated) after heat treatment. Tensile strength of EI435+30% MCh at 1100°C
in the initial state and after annealing for 500 hours was 11-14 kg/mm^2. The
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following table shows the tensile strengths and short-time strengths of EI435
with different combinations of wire filler:

	TS(1100°C)	STS(1200°C)
EI435+30% MCh	13.6 kg/mm2	---
EI435+24% VA	19	16.4 kg/mm^2
EI435+24% ChZM	22.2	17

Thus, the composite EI435+24% ChZM has the best properties above 1100°C and
shows the best prospects as a filler wire reinforcing material. 2 figures,
1 table, 3 bibliographic references.

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1/2   038   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--CERTAIN ELECTRICAL AND OPTICAL PROPERTIES OF ARTIFICIAL BORON,DOPED
    SEMICONDUCTOR DIAMONDS -U-
AUTHOR-(05)-BEZRUKOV, G.N., BUTUZOV, V.P., GERASIMENKO, N.N., LEZHEYKO,
    L.F., LITVIN, YU.A.
COUNTRY OF INFO--USSR

SOURCE--FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL. 4, APR. 1970, P 693-696.

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRIC PROPERTY, OPTIC PROPERTY, SEMICONDUCTOR R AND D,
    DIAMOND, BORON, LUMINESCENCE SPECTRUM, NITROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0068   STEP NO--UR/0449/70/004/000/0693/0696

CIRC ACCESSION NO--AP0125903
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0125903
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL INVESTIGATION OF THE
  TEMPERATURE DEPENDENCE OF THE RESISTANCE OF ARTIFICIAL BORON DOPED
  DIAMOND CRYSTALS OF VARIOUS CONCENTRATION, DURING THE GROWTH PROCESS, AT
  TEMPERATURES RANGING FROM 300 TO 800 DEG K. THE TYPE OF CONDUCTIVITY OF
  THE CRYSTALS, AND THE LUMINESCENCE SPECTRA FOR FAST ELECTRON EXCITATION
  AT TEMPERATURES BETWEEN 90 AND 300 DEG K ARE STUDIED IN THE RANGE FROM
  3000 TO 10,000 A. IT IS FOUND THAT SUCH CRYSTALS HAVE A P TYPE
  CONDUCTIVITY WITH A BORON ACCEPTOR LEVEL OF 0.35 EV, AND THAT THE
  CRYSTALS ARE COMPENSATED BY A DEEP SEATED NITROGEN LEVEL (3.6 EV)
  DETERMINED FROM THE LUMINESCENCE SPECTRUM OF THE CRYSTALS.
  FACILITY: AKADEMIIA NAUK SSSR, INSTITUT FIZIKI POLUPROVODNIKOV,
  NOVOSIBIRST, USSR.

UNCLASSIFIED

USSR

GERASIMENKO, N. N., DONINA, V. I., LEZHEYKO, L. V., SIROCHINSKIY,
S. E., and SMIRNOV, L. S., Institute of Semiconductor Physics,
Novosibirsk

"Irradiation of Diamond Crystals by Protons"

Abstract: An investigation is made of the effects of irradiating
diamond crystals with protons, plus subsequent annealing, on the
characteristics of the crystal, and an explanation is given of the
reactions of the specimens by considering the peculiarities of the
disorder region and the consequent compensation of conductivity.
Changes in the electrical conductivity and cathode luminescence
spectra of the diamonds when proton-irradiated and annealed were
recorded. The problem of finding the laws governing the behavior
of the diamonds under such treatment was solved by comparing the
data obtained after irradiation by both protons and electrons
since irradiation by electrons permits definite assumptions re-
garding defects resulting in electrical conduction and cathode lu-
minescence spectrum changes. Three types of crystal were investi-
gated: Natural, types Ia and IIa; synthetic nonconducting crystals;
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USSR

GERASIMENKO, N. N., et al, Fizika i tekhnika poluprovodnikov, No 8, 1972, pp 1489-1494

synthetic p-type semiconductor crystals alloyed with B, Al, and Ti during growth. The authors acknowledge the assistance of V. V. Bolotov for his useful comments, Ye. V. Sobolev for offering the natural diamond crystals, and of V. I. Abramenko, S. A. Sokolov, V. A. Patrenin, and Yu. M. Limasov for irradiating the crystals.

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USSR

UDC 621.315.592

BEZRUKOV, G.N., BUTUZOV, V.P., GERASIMENKO, N.N., LEZHEYKO, L.V., LITVIN, Yu.A., and SMIRNOV, L.S.

"Electrical and Optical Characteristics of Artificial Semiconductor Boron-Doped Diamonds"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 4, 1970, pp 693-696

Abstract: The artificial diamond specimens were doped by boron in their growth process, and had a carrier concentration, determined by the Hall effect at room temperature, within the limits of $5 \cdot 10^{16}$ to 10^{18} cm^{-3}, corresponding to a boron content of 0.25 to 0.25% by weight. With the variation in concentration of the boron the color of the crystals changed from blue to black. The crystals used in the measurements were cubic, with an edge of 0.5 to 1.5 mm, or in octahedral form. The following characteristics were investigated: type of conductivity, from thermoelectrical measurements; the resistance as a function of the temperature in the interval of 300-800° K, in which the two-contact method of

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electrical measurement was used, with the electrodes made of silver or graphite; radiation recombination spectrum at temperatures of 300 and 90° K with electron pulse excitation, and its dependence on the excitation density. In this latter, the electron energy was 200 kev with a pulse duration of $0.3 \cdot 10^{-6}$ seconds. Also investigated was the duration of the afterglow after the excitation pulse stopped, and its dependence on the wavelength. The authors found these diamond semiconductors to be of the p type.

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USSR

IEZHIN, S. M.

"The Influence of the Method of Pipeline Agitation on the Value of the Mean Strains and Stresses"

Translation: The cylindrical cyclic stress condition of a pipeline is investigated with assembly stresses taken into account for the case when the exceeding the yield limit. It is noted that in this case the method of agitation of amplitude stresses influences the experimental results. Two methods are considered: a quasistatic, in which the changing stress is created by a transfer of one of the pipeline ends to an apparatus for fatigue tests, and a dynamic, in which the changing stress is created due to a bending oscillation of the pipeline in a resonance system in tests on a vibration stand. A dependence of the value of the mean relative deformation in the danger point of the stressed cross section on the original error of the pipeline assembly is obtained.
     It is noted that in fatigue experiments with assembly stresses, exceeding in their sum the amplitude of the yield limit, the mean deformation at the danger
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USSR

LEZHIN, S. M., Tr. Kuybyshev, aviats. in-t, Vyp 51, 1972, pp 184-192

point of the stressed cross section increases, during which a maximum withdrawal is observed on dynamic agitation. At the same time the mean stress in the process of the experiment decreases, which is explained by the nonlinear relationship between stress and strain in the plastic region. It is proposed that the dependence obtained be used for conversion of the results of fatigue experiments from one form of agitation to the other.

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USSR

LEZHENKO, I. M.

"Influence of Reactor Bombardment on Properties of thin [...]"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol [...]

Abstract: The influence of reactor bombardment (1-10[...] n cm[...] [...] field, angular and amplitude dispersion of the anisotropy [...] magnetostriction, grain size, isotropic stresses, demagnetizing [...] electrical resistance of thin permalloy films was studied. [...] to significant changes in the properties of the thin p[...] changes apparently result from point defects created by [...] the one hand, the influence of point defects is direct [...] anisotropy field ("ordering" of vacancies and annihilation of [...] cies and interstitial atoms); on the other hand, has a[...] tensive diffusion, which facilitates accidental changes in [...] bombardment. In parallel with the increasing grain size, [...] the isotropic stresses and demagnetizing factor. The cha[...] resistance upon bombardment results both from increasing grain size [...] point defects.

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TITLE--ENTHALPY OF FORMATION OF CARBON BLACK -U-

AUTHOR-(03)-LEZHNEV, N.N., RYBAKOVA, V.I., KRASILNIKOVA, M.K.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(5), 1362-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--ENTHALPY, CARBON BLACK, CHEMICAL PRODUCT PRODUCTION, ELASTOMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0755   STEP NO--UR/0076/70/044/005/1362/1363

CIRC ACCESSION NO--AP0136192

UNCLASSIFIED

2/2   016   UNCLASSIFIED   PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0136192
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS IS THE 1ST ATTEMPT TO
CLASSIFY THE THERMODYNAMIC CHARACTERISTICS OF VARIOUS TYPES OF C BLACK.
DATA ARE GIVEN ON THE TEMP. OF COMBUSTION AND THE CALCD. AND EXPTL.
ENTHALPY OF FORMATION OF C BLACK. THESE DATA CHARACTERIZE THE STRUCTURE
DEVIATION OF C BLACK FROM THE STRUCTURE OF GRAPHITE.   THE INFLUENCE OF
VARIOUS CONDITIONS OF C BLACK PRODUCTION ARE CONSIDERED.   A MODEL OF C
BLACK, USEFUL IN CONSIDERING ELASTOMER STRENGTHENING IS ADVANCED.
FACILITY: NAUCH.-ISSLED. INST. SHINNOI PROM., MOSCOW, USSR.

UNCLASSIFIED

1/2   019   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--SOLUBILITY OF HYDROPEROXIDES OF M AND P, DIISOPROPYL BENZENES -U-

AUTHOR-(02)-LEZHNEVA, I.M., SINOVICH, I.D.

COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(1), 73-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROPEROXIDE, ISOPROPYL BENZENE, SOLUBILITY, MOLECULAR
    WEIGHT, HYDROGEN BONDING, ELECTRON DONOR, ISOMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0576   STEP NO--UR/0204/70/010/001/0073/0075

CIRC ACCESSION NO--AP0119494
                           UNCLASSIFIED

CIRC ACCESSION NO--AP0119494
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. OF M AND P, DIISOPROPYL
  MONOHYDROPEROXIDES IN DIFFERENT TYPES OF SOLVENTS DECREASES WITH
  INCREASE IN THE MOL. WT. OF THE SOLVENT AND WITH INCREASE OF THE
  HYDROPEROXIDES M.P.   THE SOLY. OF THE HYDROPEROXIDES DEPENDS ON THE H
  BOND FORMING TENDENCY OF THE SOLVENT AND INCREASES WITH THE ELECTRON
  DONOR PROPERTIES OF THE SOLVENT.   THE META ISOMER HAS A HIGHER SOLY.
  THAN THE PARA ISOMER AND IT DISSOLVES IN SOLVENTS NOT EXHIBITING EITHER
  ELECTRON DONOR OR PROTON DONOR PROPERTIES. THE SOLY. DATA ARE TABULATED
  FOR 26 SOLVENTS.   FACILITY: NAUCH.-ISSLED. INST. SIN. SPIRT.
  ORG. PROD., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.438-253.5-71:533.6.011.001.24

LEZHOYEV, V. R., MITYUSHKIN, YU. I.

"Calculation of the Parameters of Gas Flow at the Output of a Profile Lattice With the Emission of Cooling Air"

Tr. Leningr. korablestroit. in-ta (Works of Leningrad Shipbuilding Institute), 1970, No. 70, pp 63-71 (from RZh-Turbostroyeniye, No 8, Aug 71, Abstract No 8.49.90)

Translation: Problems associated with the interaction of gas flow with a jet of cooling air coming from the trailing edge of the nozzle or working blades at a certain angle to the basic flow are discussed. It follows from the calculations that the angle β_2 of the emission of the flow decreases and the relative velocity of the mixture λ and the ratio of the total pressure P_2 at a certain cross section to the pressure P_1 rise depending on the increase in the relative quantity of cooling air ($G = 0.1$) being supplied to the slit from the concave side of the blade; this must be considered in determining the work of the turbine stage with air cooling of the blades. With an increase in the

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LEZHOYEV, V. R., MITYUSHKIN, YU. I., Tr. Leningr. korablestroit. in-ta, 1970, No. 70, pp 63-71

absolute difference in the angles β_1 and β' to $90°$ with a supply of cooling air to the concave portion, the angle β_2 decreases (where β' is the angle at which the flow of cooling air enters the basic flow) and λ_2 and P_2/P_1 increase. With an increase in the difference of the angles $\beta_1 - \beta'$ to $90°$ with injection of cooling air into the back edge of the blade, the angle β increases and λ_2 and P_2/P_1 are reduced. Consideration of the thickness of the output edges does not change the nature of the relationship of the angle β_2, λ_2 and $P_2:P_1$. 6 ill., 7 ref. L. P. D.

2/2

USSR   UDC 621.438-71.018

LEZHOYEV, V. R., MITYUSHKIN, YU. I.

"Effect of the Emission of Cooling Air Into the Duct Portion of a Turbine on
the Economy of a High-Temperature Gas Turbine Engine"

Tr. Leningr. korablestroit. in-ta (Works of Leningrad Shipbuilding Institute),
1970, No. 70, pp 55-62 (from RZh-Turbostroyeniye, No 8, Aug 71, Abstract No
8.49.89)

Translation: The effect of the emission of cooling air into the duct portion
on the economy of the turbine stage as a whole is discussed. One of the
methods of using the energy of the cooling air to raise the economy of a high-
temperature turbine could be the application of jet flaps in nozzles and working
lattices of the turbine stage. The cooling air is emitted into the basic gas
flow close to the output edge of the nozzle or working blade at a certain
angle to the deflection of the gas flow. Analysis of the magnitude of the rela-
tive change in the efficiency at the periphery of the working wheel shows that
with an increase in the relative quantity of cooling air supplied to the duct

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portion at an angle of 90°, the relative change in peripheral efficiency of
the stage rises and for a relative emission of cooling air of 0.1 it reaches
16.3% in the case of the emission of cooling air into the duct portion from
blades of the nozzle equipment and the working wheel. Injection only through
the blades of the working wheel is less effective. A change in the difference
in the angle of emission of the gas flow and the cooling air from the profile
lattice leads to a rise in the relative change of the effective efficiency
of the device and a relative change in the effective work. Most effective is
emission of cooling air through the blades of the nozzle equipment. 5 ill.,
5 ref. L. P. D.

2/2

USSR   UDC 699.14.018.44:548.53

YUFEROV, V.M., and LEZINSKAYA, Ye.Ya., All-Union Scientific Research,Design
and Technological Institute of the Pipe Industry

Abstract: The effect of the intermetallic phase on recrystallization processes
of dispersion-hardening steel EP 150 (steel OKh16N36MBTYuR) was investigated
under conditions of usual furnace heating, electrocontact heating, and induction
heating. The heating temperature dependence of the tensile strength and the
average conventional grain diameter of the EP 150 steel is shown in comparison
with steel EP 350 (OKh20N45B). It was found that coagulation and dissolution
of the Ni_3Ti-type intermetallic phase in the recrystallization process of the
cold-deformed EP 150 steel contributes to a vigorous growth of grain and in-
creasing graining difference in the 1050-1100°C temperature range. A more
small-grained and homogeneous steel structure results by induction heating.
To eliminate the different graining of the structure of cold-deformed heat-
resisting and dispersion hardening steels, higher deformation degrees and
increased heating rates of the metal by thermal treatment have to be applied.
Two Illustr., seven biblio. refs.

USSR

UDC: 541.183

DUBININ, M. M., TODES, O. M., and LEZIN, YU. S., Institute of
Physical Chemistry, Moscow, Academy of Sciences USSR

"Equations Characterizing Adsorption Kinetics on Porous Adsorbent
for the Entire Grain as a Whole"

Abstract: On the basis of theoretical analysis the authors showed
that the coefficients of internal and external mass exchange in a
wide range of the fluctuation of bio criterion are additive. An
empirical equation for the determination of the coefficient of inter-
nal mass exchange with linear adsorption isotherm was developed.
Using experimental data on the kinetics of benzene adsorption on
active carbon it was shown that in spite of the fact that the values
of the coefficient of internal mass exchange β_1 and the coef-
ficient of internal diffusion D change when one type of active
carbon is changed for another, but the ratio of β_1/D remains practic-
ally the same. This agrees with theoretical equation by which β_1
is a linear function of D.

1/1

USSR

UDC 541.183

PLACHENOV, T. G., LEZIN, Yu. S., BARANOV, Ye. I., SEBALLO, A. A., KVASHA,
V. I., and SHIRYAYEV, A. N.

"Adsorption Dynamics of Mixtures in Moving Layers of Adsorbents"

Abstract: Continuous adsorption processes are used to purify various sub-
stances from impurities. To achieve optimal results, methods must be
developed to calculate the concentration distribution in the solid and gas
phases along the adsorption column, the rate of movement of the solid phase,
and the distance at which the concentration of the recovered material should
be the greatest. A theoretical treatment of an equilibrium situation is
given, in which the concentrations do not change with time. The data cal-
culated from the formula derived agree well with experimental results
obtained, using a binary mixture of n-octane and benzene vapors on a
column filled with SKT-2 charcoal.

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UDC 378.121

USSR

AGEYEV, D. V., GLEBOVICH, G. V., LEZIN, YU. S., MALANOV, V. V., MORUGIN, L. A.,
SMORGONSKIY, V. YA.

"Gor'kiy Polytechnic Institute"

Abstract: A review of the scientific research work performed by the radio
engineering department of Gor'kiy Polytechnic Institute is presented. Abstracts
and bibliographic listings of many of the papers published by members of the
radio engineering faculty are presented. The fields of study covered include
improving the noise immunity of radio technical systems, the theory of pulse-
duration modulation and pulse amplification of low-frequency electrical oscil-
lations, improvement of the speed of pulse devices, automatic phase control
and wave guide theory, and utilization of the research results in the training
process. Specific lecture courses at the university in which the scientific
research papers are used are listed.

1/1

LEZIN, Yu. S., Active Member of the Scientific and Technical Society of Radio Engineering, Electronics and Communications

"Exponentially Weighted Incoherent Accumulation of Pulse Signals Against a Background of Gaussian Noise and Random Pulse Interference"

Abstract: Ideal analog incoherent accumulation of pulse signals against a background of gaussian noise has been investigated by Marcum [Trans. IRE, v. IT-6, No 2, 1960] and Swerling [Trans. IRE, v. IT-6, No 2, 1960], and against a background of random pulse noise, by Zyuzev [Radiotekhnika i elektronika, Vol 7, No 3, 1962]. In this article, an analysis is made of incoherent exponentially weighted accumulation of an additive mixture of pulse signals, gaussian noise and random pulse interference. The theory of threshold signals with incoherent exponentially weighted accumulation of pulse signals against a background of gaussian noise is generalized to the case of an additive mixture of gaussian noise and random pulse interference both having constant amplitude and fluctuating by the Rayleigh law. A procedure was developed for calculating the threshold signals both in the presence of their fluctuations and during unanimous and independent
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USSR

LEZIN, Yu. S., Radiotekhnika, Vol 26, No 10, 1971, pp 31-37

fluctuations. The results obtained permit calculation of both the loss in power of the threshold signals as a result of the pulse interference effect and the accumulation effect [Lezin, Optimal'nyve fil'trv i nakopiteli impul'snykh signalov, Moscow, Soviet Radio Press, 1969].

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USSR

UDC 621.391:519.2

LEZIN, YU. S.

"Comparative Characteristics of Various Methods of Analog Storage of Pulse Signals"

Radioelektronika v nar. kh-ve SSSR. Ch.1 -- V sb (Radio Electronics in the National Economy of the USSR. Part 1 -- collection of works), Kuybyshev, 1970, pp 41-52 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A79)

Translation: Various methods of coherent storage of pulse signals are investigated: ideal storage, single storage element with delayed feedback (recirculator), double storage element, 2-, 3-, n-step storage, recirculator with frequency shift. It is demonstrated that the last method permits realization of coherent storage even in the case of unknown pulse frequency and measurement of the latter. The high efficiency of analog storage is noted. There are 3 illustrations and a 2-entry bibliography.

1/1

FEATURES OF HEAT-RESISTANT STEEL RECRYSTALLIZATION

Article by Ye. Ya. Lezinskaya, All-Union
Scientific Research and Design Institute of the
Pipe Industry; Minsk, Izvestiya Akademii Nauk Belorusskoy SSR,
Seriya Fiziko-Tekhnicheskikh Nauk, Russian, No 2, 1972, Signed
to the press 21 November 1971, pp 77-80)

The process of recrystallization of supersaturated
solid solutions possesses features associated with the effect
of second-phase particles on structural changes in metal during
deformation as well as on nucleation centers of recrystalliza-
tion and their subsequent growth /1, 2/. Recrystallization of
deformed supersaturated solid solutions is accompanied by their
decomposition associated with precipitation of a second phase
/3/. Usually these dispersed precipitations shift the start
of recrystallization into the region of higher temperatures /4/.
However, not only the presence of the second phase but also the
degree of its dispersity, tendency to coalescence, and dissolu-
tion in a specific temperature interval renders an effect on the
kinetics of recrystallization /5/. In certain cases, growth of
nuclei in the recrystallization of an alloy is not only not re-
tarded, but, conversely, is significantly accelerated under con-
ditions of coalescence and dissolution of the second phase in
the specified temperature interval /6/. This phenomenon is
characteristic for certain complexly alloyed steels with inter-
metallic strengthening which, in comparison with other high-
alloy non-aging steels, manifest an increased tendency toward
grain growth at a temperature above 1050-1150 C.

Investigation of this feature of recrystallization of a
complexly alloyed steel was carried out in this work.

Pipes measuring 16x 1 and 17x0.5 mm and made of steels
0Kh16N36MBTYuR (EP150) and 0Kh20N45B (EP350) were used as the

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[1 - USSR - I]

Transformation and Structure

UDC 669.1.017.3:669.1'.018.8

USSR

YUFEROV, V. M., and LEZINSKAYA, YE. YA

"Structural and Phase Transformations of Deformation Martensite in 1Khl5N9SZB Steel"

Translation: An investigation was made of 1Khl5N9SZB (EP302) stainless steel. The substitution in this steel, as compared with steel 1Khl8N9B, of 3% chromium with the same amount of silicon leads to a considerable decrease in the stability of the steel austenite, whose martensite deformation point (M_d) reaches +150°C.

The cold rolling of 1Khk5N9SZB steel below the M_n point is accompained by the formation of deformation martensite, the amount of which reaches 70-80%. On heating the deformed steel over the 450-700° range the process of transformation of deformation martensite into austenite occurs, its speed during isothermal holding changing in time. The formation of austenite in the $\alpha \rightarrow \gamma$ transformation is accompanied by cold phase hard-

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USSR

YUFEROV, V. M., and LEZINSKAYA, YE. YA., Metallofizika, No 32, 1970, pp 82-85

ening and it acquires a fragmented structure inherited from the deformation martensite.

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1/2   006   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--REPRESENTATIONS OF NONCOMPACT GROUPS U (P, Q). I -U-

AUTHOR-(02)-LEZNOV, A.N., SAVELYEV, M.V.

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 2, NR 3, PP
311-327
DATE PUBLISHED-------70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--GROUP THEORY, MATHEMATIC TRANSFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/2037   STEP NO--UR/0646/70/002/003/0311/0327

CIRC ACCESSION NO--AP0102066
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0102066

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD IS PROPOSED FOR THE
CONSTRUCTION OF IRREDUCIBLE REPRESENTATIONS OF NON COMPACT PSEUDOUNITARY
GROUPS U (P, Q). THE METHOD IS BASED ON TRANSITION FROM THE REGULAR
REPRESENTATION OF THE GROUP TO THE "LIMIT" REPRESENTATION, WHICH IS
OBTAINED FROM THE REGULAR ONE, WHEN NONCOMPACT PARAMETERS GO TO
INFINITY.

UNCLASSIFIED

USSR   UDC: 681.2/325

KILRNIK, I. I., LEZOV, A. P., SAZONOV, I. A., TSEPLYAYEV, K. N., and SILU-
YANOV, V. A.

"Specialized Digital Measuring Unit"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute),
1972, vyp.154, pp 133-138 (from RZh-32. Metrologiya i Izmeritel'naya Tekhnika,
No 5, 1973, Abstract No 5.32.60)

Translation: The authors present a short description and the technical char-
acteristics of a digital unit developed by the Department of Information-
Measurement Technology of the Moscow Power Engineering Institute for the
remote control study of high-speed processes. This unit in some ways satis-
fies current requirements. The unit consists of three blocks: analog-digi-
tal converter, a remote block, and a matching block. The analog-digital con-
verter and the remote block are connected by a cable communication line 250-
500m long. The following are the basic technical data of the digital remote
control unit model: nominal value of the input voltage $U_{nom}=100mv$; funda-
mental error of the measurement result at the most sensitive limit does not
exceed $\pm(0.05-0.025 \frac{U_{nom}}{U_x})$percent; maximum sensitivity is not less than

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· USSR

KLIMNIK, I. I., et al., Tr. Mosk. energ. in-ta, 1972, vyp. 154, pp 133-138

40 microvolts; with the following input resistance: a) not less than 100 kilohms under conditions of compensation; b) not less than 50 kilohms in the equilibration process; 50, 100, 200, 400, 1000 measurement frequency; power consumed from a 220v network does not exceed 30w; unit dimensions: a) the analog-digital converter - 220 x 400 x 250 mm, b) the remote block - 180 x 270 x 170 mm, c) matching block - 180 x 200 x 180 mm. Original article: two illustrations and one bibliographic entry.

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1/2   019   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--DEHYDRATION AND DESALTING OF PETROLEUM -U-

AUTHOR-(04)-SMIRNOV, YU.S., PETROV, A.A., LEZOV, O.F., POLYANTSEV, V.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,795
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL PATENT, PETROLEUM DESALTING, PETROLEUM DEHYDRATION,
  BLOCK COPOLYMER, ETHYLENE OXIDE, ALIPHATIC AMINE, PROPYLENE OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0886   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132976
                       UNCLASSIFIED

CIRC ACCESSION NO--AA0132976
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   PETROLEUM IS DEHYDRATED AND
DESALTED BY INTRODUCING A CATION ACTIVE DEMULSIFIER, E.G., A HIGHER
ALIPHATIC PRIMARY AMINE HYDROCHLORIDE, AND A NONIONIC SURFACTANT, E.G.,
BLOCK COPOLYMER OF ETHYLENE OXIDE AND PROPYLENE OXIDE.   THE RATIO OF THE
FIRST COMPONENT TO THE SECOND IS 3:1 TO 5:1.

UNCLASSIFIED

TITLE--PERIODIC SHOCK WAVES IN A GAS -U-

AUTHOR-(03)-GALIYEV, SH.U., SADYKOV, A.V., LGAMOV, M.A.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA ZHIDKOSTI I GAZA,
   MAR.-APR. 1970, P. 57-66
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SHOCK WAVE ANALYSIS, SHOCK WAVE FORMATION, SHOCK TUBE,
   HARMONIC OSCILLATION, SUCCESSIVE APPROXIMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1198   STEP NO--UR/0421/70/000/000/0057/0066

CIRC ACCESSION NO--AP0124852
                       UNCLASSIFIED

CIRC ACCESSION NO--AP0124852
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL INVESTIGATION OF
  LONGITUDINAL NONLINEAR OSCILLATIONS OF A GAS EXCITED IN A CLOSED TUBE.
  THE AMPLITUDES AND PROFILES OF THE SHOCK WAVES OBTAINED ARE COMPARED
  WITH THEIR THEORETICAL VALUES FOR EXCITATION FREQUENCIES CLOSE TO THE
  FIRST NATURAL FREQUENCY OF THE GAS COLUMN. THE EXPERIMENTS REVEALED THE
  EXISTENCE OF SHOCK WAVES AT AN EXCITATION FREQUENCY ONE HALF THE FIRST
  NATURAL FREQUENCY. A THEORY IS DEVELOPED FOR THIS CASE, WITH THE AID OF
  SUCCESSIVE APPROXIMATIONS.

                        UNCLASSIFIED

AA0038801   Li, A.I.   UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

238380 HEAT TREATMENT OF CONCRETE AND REINFORCED
CONCRETE ARTICLES is carried out by means
of a.c. of main frequency during the vibrational
formation of the articles. The temperature is rap-
idly increased to 90-100°C (instead of the conven-
tional rate of 20°C/hr.), whereby the duration of
the articles, the moulds are removed without delay,
and the articles are further heated at the same
temperature until the desired strength is reached.
As electrodes, insulated parts of the forming
machines or reinforcement elements are used. Com-
pared with the known methods, this process is
shortened by 2-4 hrs. The density of the articles
is increased, because the vibrational formation is
carried out at elevated temperatures. There is no
temperature gradients, so that internal stresses
do not develop. The removal of the mould elements
is facilitated because of the formation of a vapour
layer at the contact surfaces. 26.10.67. as 1194251/
29-33. S.A.KRYLOV et alia. Institute of Concrete
and Reinforced Concrete. (10.7.69.) Bul.9/10.2.69.
Class 80a. Int.Cl. B28c.

19740001

AA0038801

AUTHORS: Krylov, B. A.; Li, A. I.; Malinina, L. A.;
Mironov, S. A.; Rudenko, I. F.; Polomevev, A. A.;
and Shchurov, Yu. I.

Nauchno - Issledovatel'skiy Institut Betona i Zhelezobetona

19740002

USSR

KHASANOV, V. Kh., and LI, A. P., Khorezmskaya Oblast Sanitation and Epidemiological Station

"Investigation of the Activity of Serum Cholinesterase as an Indicator of the Effect of Organophosphorus Pesticides on a Healthy Population"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 7, Jul 70, pp 12-13

Abstract: The effects of organophosphorus pesticides on healthy subjects were studied. Air samples obtained between July and October were analyzed to determine the content of methylmercaptophos and butyphos from the spraying of crops. A direct inverse relationship was found between the content of these toxic agents in the air and the distance from the field being sprayed, regardless of the method used for spraying. Serum cholinesterase activity was used as an indicator of exposure to toxic agents. Three groups of people were studied: 33 youths living in the country, 35 youths living in the city (control), and 42 workers whose employment involved the direct handling of these pesticides. A 30-50% drop in cholinesterase activity was noted in the first and third groups during the period when pesticides were being used. The control group showed no such drop.

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USSR

LI KHOANG TU

"Approximately Optimal Properties of Wald Tests and Problem of Checking Statistical Hypotheses.   II."

Vestn. Leningr. Un-ta [Herald of Leningrad University], 1973, No 1, pp 37-43 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V123, by the author).

Translation: For Part I, see RZhMat, 1970, 4V171.
     It is proven that Wald criteria based on estimation of maximum likelihood have certain approximately optimal properties with an accuracy to $o(N^{-1/2+\varepsilon})$ where ε is any small positive number and N is the number of observations.

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1/2   038
UNCLASSIFIED
TITLE--SPECTROSCOPIC INVESTIGATION OF THE INDUCED RADIATION OF A LASER
   BASED ON SRF2 AND ND(3POSITIVE) CRYSTALS (TYPE 1) -U-
PROCESSING DATE--18SEP70
AUTHOR-(02)-KAMINSKIY, A.A., LI, L.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, JAN. 1970, P. 35-40

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LASER RADIATION, SPECTROSCOPY, CRYSTAL ABSORPTION, CRYSTAL
   LUMINESCENCE, STRONTIUM COMPOUND, FLUORIDE, YTTRIUM COMPOUND, NEODYMIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/1608
STEP NO--UR/0368/70/012/000/0035/0040
CIRC ACCESSION NO--AP0047930
UNCLASSIFIED

2/2   039
CIRC ACCESSION NO--AP0047930   UNCLASSIFIED   PROCESSING DATE--18SEP70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HIGH TEMPERATURE SPECTROSCOPIC
STUDY OF THE STIMULATED RADIATION, LUMINESCENCE, AND ABSORPTION SPECTRUM
OF STRONTIUM FLUORIDE CRYSTALS CONTAINING TRIVALENT NEODIMIUM CATIONS.
AT A TEMPERATURE OF 500DEGK, A LASER ACTION OF THESE CRYSTALS IS
ESTABLISHED AT A WAVELENGTH OF ABOUT 10,446 A IN ADDITION TO TWO
EMISSION LINES RECORDED PREVIOUSLY AT ROOM TEMPERATURE. THE HIGH
TEMPERATURE LIMIT OF LASER ACTION IS DETERMINED FOR THESE CRYSTALS. THE
EFFECT OF PHOTOREDUCTION OF TRIVALENT NEODIMIUM CATIONS INTO BIVALENT
CATIONS IN STRONTIUM FLUORIDE BY UV LIGHT IS DETECTED AND STUDIED. THE
POSSIBILITY OF OBTAINING A LASER ACTION IN MIXED STRONTIUM YTTRIUM
FLUORIDE CRYSTALS CONTAINING TRIVALENT NEODIMIUM CATIONS IS ANALYZED.

UNCLASSIFIED

TITLE--SPECTROSCOPIC AND GENERATION STUDIES OF CRYSTALLINE COMPOUNDS IN THE CALCIUM OXIDE AND NIOBIUM PENTOXIDE SYSTEM CA(NB) SUB3)2 AND NB

AUTHOR-(02)-KAMINSKIY, A.A., LI, L.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6 (2) 294-306

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--CALCIUM OXIDE, SPECTROSCOPIC ANALYSIS, CRYSTAL STRUCTURE, NIOBIUM OXIDE, RADIATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0545   STEP NO--UR/0363/70/006/002/0294/0306

CIRC ACCESSION NO--AP0105530

UNCLASSIFIED

2/2   036
CIRC ACCESSION NO--AP0105530
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE CA(NBO SUB3)2 CRYSTALS
ACTIVATED BY ND PRIME3 POSITIVE WERE STUDIED. COMPLEX SPECTROSCOPIC
ANAL. AND INDUCED IRRADN. MADE IT POSSIBLE TO DET. THE POSITION OF THE
STARK LEVELS OF THE ND PRIME3 POSITIVE ION IN THE CA(NBO SUB3)2 CRYSTAL.
THE SPECTROSCOPIC INVESTIGATIONS PERFORMED CONFIRMED THE EXISTENCE IN
THE CA(NBO SUB3)2 NEGATIVE ND PRIME3 POSITIVE CRYSTALS OF SEVERAL TYPES
OF ACTIVATOR CENTERS. THEIR DIVERSE PROPERTIES ARE MENTIONED. THE
FUNDAMENTAL PARAMETERS OF THE INDUCED IRRADN. RELATIVE TO THE CRYSTALS
STUDIED WERE INVESTIGATED AT 77-650PERCENT. IMPORTANT SPECTROSCOPIC AND
GENERATION CHARACTERISTICS OF THE CA(NBO SUB3)2 NEGATIVE ND PRIME3
POSITIVE CRYSTAL WERE MEASURED AND CALCD.

UNCLASSIFIED

UDC 550.42

USSR

LI, L. V., and DATSENKO, V. M., Siberian Scientific-Research Institute of Geology, Geophysics and Mineral Raw Material, Krasnoyarsk

"Characteristics of Gold Distribution in Granitoids of Proterozoic Intrusions in the South-Yenisey Ridge"

Moscow, Geokhimiya, No 6, Jun 73, pp 848-855

Abstract: Newly obtained results of the gold content in metasomatic and palingenic granitoids of the region determined by the radioactivation method are reported. It has been shown that the more basic and melanocratic rocks of the endocontact and central zones of the Taraksk and Posolnensk metasomatic granitoid massifs are slightly enriched in gold. The absence of significant differences in the gold content in palingenic granites of different phases of the Nizhnekansk massif is accounted for by the inert behavior of gold during the differentiation of granite magma. The outlined tendency towards a decrease in the concentration of gold in granitoids of intrusions of the later formations may be connected with peculiarities of the substrate over which the granite melt has been formed and with the facial conditions of its crystallization.

1/1

USSR   UDC 632.951:633.88

LI, N., and OSTROVSKIY, N. I., All-Union Scientific research
Institute of Medicinal Plants, Bittsa, Ministry of Health USSR

"Effectiveness of the Use of Certain Insecticides Against Turnip
Moth Caterpillars on Solanum Laciniatum Ait. Plantings"

Moscow, Khimiya v Sel'skom Khozyzystve, Vol 8, No 7, Jul 70, pp 31--32

Abstract: Studies were conducted of the effectiveness of certain
insecticides against turnip moth caterpillars on young Solanum laci-
niatum Ait. crops, a source of steroid hormones in the USSR. Under
hot and dry climate conditions, the succulent Solanaceae family
plants attract turnip moth caterpillars and contribute to their
development. One of the reasons for the inadequate effectiveness
of organochlorine preparations in pest control is loss of their
toxicity under high temperature and active solar radiation condi-
tions. Granular preparations are more resistant to meteorological
factors and less dangerous for entomophages and pollinating insects
than dusts. Therefore, to protect the plants against the turnip
moth caterpillars during the course of vegetation, granular insecti-
cides were used. To prevent early damage to shoots, the intoxica-
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USSR

LI, N., et al., Moscow, Khimiya, v Sel'skom Khozyaystve, Vol 8, No 7, Jul 70, pp 31-32

tion method was applied.

It was found that preplanting powdering of seeds with aldrin contributed to an 85.3% decrease in shoot damage, and with heptachlor and the gamma-isomer of hexachlorocyclohexane it was 23.5% and 19.1% respectively. Such a level of damage decrease under brief intoxication is clearly inadequate; therefore, the preplanting powdering of the plants in the system of control measures for the turnip moth caterpillar can only be considered as a supplementary one. The low effectiveness of powdering, probably, can be explained by the poor adherence of the insecticides on the smooth and fine Solanum seeds. In belt-type row application of the granular insecticides, the amount of damaged and lost plants dropped by 94-95% in comparison with control plants. Application of diazinon in half dose only partly protected the young crops from pest damage. Unsatisfactory results were also obtained in spraying of the young crops with a diazinon suspension.

2/2

USSR   UDC 678.643.01:53

LI, P. Z., STAROSTIN, V. N., FILIPPENKO, D. M., TARASOV, YE. V., and
GORBUNOV, V. N.

"Glass-Textolite Based on Compositions Containing 4-Vinyl-1,2-epoxy-
cyclohexane"

Moscow, Plasticheskiye Massy, No 10, 1970, pp 14-15

Abstract: In an attempt to develop materials capable of prolonged
exposure to high temperatures, compositions containing 4-vinyl-1,2-
epoxycyclohexane (VECH), dioxide of the dicyclopentadiene (DODCP),
ED-5 resin and maleic anhydride (MA) were studied. The materials were
subjected to a short and long term exposure to high temperatures.
Data on thermomechanical properties, weight loss on heating, dielectric
permeability and maximum strength on static bending are reported gra-
phically. On the basis of experimental results materials composed of
12.1 VECH + 48.3 DODCP + 39.6 MA or 9.3 VECH + 23.2 DODCP + 23.2 ED-5
+ 43.3 MA can be used for prolonged periods at 250°C temperature,
while the composition consisting of 16.2 VECH + 48.9 ED-5 + 34.9 MA
can be used at 200°C for extended periods.
1/1

USSR   UDC 612.35:615.32

LI, S. YE.

"The Effect of Eleutherosides on the Mitotic Activity and Ploidy of Liver
Cells in Mice After Partial Hepatectomy", pp 73-75, Sintez Belka i Rezis-
tentnost' Kletok, (Proteins Synthesis and Cell Resistance), Leningrad,
"Nauka," 1971, 104 pp

Abstract: The eleutheroside group is a glycoside fraction of an extract
prepared from the Far Eastern medicinal plant. Eleutherococcus senticosus
Maxim. The preparation, injected into mice in a dose of 0.8 ng per 20 g
of body weight, stimulates liver regeneration after partial hepatectomy
(removal of 2.3 of the organ). With in 86 hours of the operation, regenera-
tion is apparent in an increase in the amount of hepatocytes in mitosis.
In 10 days the eleutheroside group promotes normalization of the mitotic index
and intensifies the polyploidy of liver cells.

1/1

1/2   028   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--HOW WE ELIMINATED FOOT AND MOUTH DISEASE -U-

AUTHOR-(02)-ISKAKOV, K.I., LI, V.I.

COUNTRY OF INFO--USSR

SOURCE--VETERINARIYA, 1970, NR 1, PP 51-52

DATE PUBLISHED--------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FOOT AND MOUTH DISEASE, VACCINATION, PROPHYLAXIS, DISEASE
  CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1251   STEP NO--UR/0346/70/000/001/0051/0052

CIRC ACCESSION NO--AP0136697
                              UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0136697
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE CHIEF AND MOST EFFECTIVE
  MEASURE IN ELIMINATING FOOT AND MOUTH DISEASE WAS VERY STRICT OBSERVANCE
  OF QUANTINE REGULATIONS. A COMPLEX PROGRAM OF PROPHYLACTIC MEASURES
  INCLUDED VACCINATION, WHICH CREATED AN IMMUNE RING AROUND UNSAFE FOCI
  AND PREVENTED SPREAD OF THE DISEASE. THE FIRST OUTBREAK OF FOOT AND
  MOUTH DISEASE AMONG CATTLE WAS REPORTED IN FEBRUARY, 1968, AMONG
  PRIVATELY OWNED CATTLE. QUARANTINE WAS IMMEDIATELY IMPOSED AND ANIMALS
  GIVEN A DOUBLE VACCINATION WITH STRAIN A SUB22. CALVES LESS THAN TWO
  MONTHS OLD WERE GIVEN CONVALESCENT SERUM. A MOBILE DISINFECTION STATION
  TREATED LOCATIONS ON A DAILY BASIS AND SPRAYED ANIMALS EVERY THREE DAYS.
  ALL CATTLE ON SURROUNDING FARMS WERE VACCINATED. THE SECOND OUTBREAK
  OCCURRED IN SEPTEMBER, 1968, IN ANOTHER AREA. A HERD OF 32 HEAD WAS
  ALAUGHTERED AND QUARANTINE IMPOSED FOR A MONTH; UNTIL THE DISEASE WAS
  ERADICATED. A THIRD FOCUS APPEARED IN AUGUST, 1968, AMONG PASTURED
  CATTLE AND WAS ELIMINATED IN THE SAME MANNER. IN THE THIRD FOCUS THE
  SOURCE OF INFECTION WAS UNDETERMINED.   FACILITY:
  TALDY-KURGANSKOYE OBLSEL'KHOZUPRAVLENIYE.

UNCLASSIFIED

USSR

UDC 669.15.018.295:538.5

GRUZIN, P. L., RODIONOV, YU. L., LI, YU. A., YEDNERAL, A. F., ZHUKOV, O. P., and PERKAS, M. D., Institute of Metal Science and Physics of Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Redistribution of Alloying Elements Upon Recovery in Martensite-Aging Alloys Fe-Ni-Mo and Fe-Ni-Co-Mo"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 2, 1973, pp 423-427

Abstract: In order to determine the reasons for differences in the nature of change of recovery of the alloys N16M5 and N16K15M5 at various temperatures, the phenomenon was studied by nuclear γ-resonance (NGR). The composition of the alloys is as follows: N16M5--16 wt.% Ni, 5Mo; N16K15M5--16.4% Ni, 5.25% Mo, 15.1% Co, remainder Fe in both cases. Low temperature aging was at 420° C for 8-100 hours; the recovery temperature was 100° C higher. It was found that cobalt has a significant influence on the processes of redistribution of alloy-element atoms during recovery. The degree of recovery in alloys with cobalt increases, apparently as a result of decomposition of metastable segregations at low temperatures.

1/1

USSR   UDC: 539.2+621.039.8

GRUZIN, P. L., RODIONOV, Yu. L., MKRTCHYAN, V. S., LI, Yu. A.

"Study of the Effect   of Cobalt on the Redistribution of Alloy Element
Atoms in Iron-based Alloys by the NGR Method"

Abstract: Cobalt as an alloying element has a significant influence on the
physical and mechanical properties of alloys. However, there is no unified
opinion at present concerning the relative role of cobalt in changing the
properties of alloys. This work studied the influence of cobalt on the re-
distribution of atoms of alloying elements in submicrovolumes of iron-based
alloys by the method of nuclear gamma resonance (NGR). Alloys studied
included Fe-12Co; Fe-16Ni-5,6Co; Fe-16Ni-10Co; Fe-16Ni-15Co; Fe-16Ni-15Co-5Mo;
Fe-16Ni-15Co-10Mo; Fe-18Ni-10Co-10W.

1/2

USSR

GURZIN, P. L., RODIONOV, Yu. L., MKRTCHYAN, V. V., LI, Yu. A., Moscow,
Doklady Akademii Nauk SSSR, Vol 204, No 2, 1972, pp 328-331.

The influence of hardening and subsequent tempering at 400-500°C on the
resonance spectra was studied for the alloy Fe-16Ni. The study showed that
in the early stages of tempering of iron-cobalt at 400-500°C, the atoms of
cobalt are redistributed, resulting in an increase in the number of cobalt
atoms in the immediate neighborhood of the iron; the molybdenum and tungsten
atoms move away from the iron atoms in the solid solution. In later stages
of tempering, the phases Fe_7Mo and Fe_7W are formed. Establishment of close
order of iron and cobalt atoms retards the processes leading to the
separation of phases such as Fe_2Mo.

2/2

USSR

UDC 539.4.012

KRESTIN, G. S., LIBATSKIY, L. I., YAREMA, S. YA., Physical Mechanics Institute of the Ukrainian SSR Academy of Sciences, L'vov, L'vov Polytechnic Institute

"Stressed State of a Disc with a Diametral Crack"

Abstract: A solution of the integral equation of the symmetric problem in the form of a series with respect to λ (λ is the crack length reduced to the disc diameter) is found for a disc with a central diametral crack with arbitrary symmetric and antisymmetric loads. Formulas are also found for determining the stress intensity coefficients with accuracy to terms of order λ^{12}. Graphs are presented showing the variation of the critical value of concentrated normal and tangential forces as a function of the crack length and the variation of the corresponding distributed loads.

1/1

TITLE--DISCONTINUITY OF DISPLACEMENTS ALONG RECTILINEAR SECTIONS IN A
   PLATE WITH A CIRCULAR HOLE -U-

AUTHOR-(02)-LIBATSKIY, L.L., BARANOVICH, S.T.

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MEKHANIKA, VOL. 6, MAR. 1970, P. 80-86

DATE PUBLISHED----MAR70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, PHYSICS

TOPIC TAGS--INTEGRAL EQUATION, VECTOR, APPROXIMATE SOLUTION, CRACK
   PROPAGATION, STRUCTURE FORM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0871   STEP NO--UR/0198/70/006/000/0030/0086

CIRC ACCESSION NO--AP0116381
                              UNCLASSIFIED